Remarks

The present paper is submitted in response to the Final Office Action dated May 27, 2004. In the Office Action, the Examiner rejected claims 1, 2, 4, 5, 11, 12 and 13 as being rejected under the judicially created doctrine of obviousness double patenting. In addition, claims 1-5, 7-21 and 24 were rejected under 35 U.S.C. §103(a) as being unpatentable over Brown in view of Bombard, Stodolka and Sinha et al.

With respect to the rejection of claims 1, 2, 4, 5, 11, 12 and 13 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 4, 9, 10, 16, 17 and 18 of U.S. Patent No. 6,443,166, Applicants will submit a Terminal Disclaimer to overcome this rejection after the remaining rejections have been withdrawn and upon receiving an indication of allowable subject matter. Accordingly, submission of a Terminal Disclaimer will render the obviousness-type double patenting rejection moot.

With respect to the rejection of claims 1-5, 7-21 and 24 under 35 U.S.C. §103(a) as being unpatentable over Brown in view of Bombard, Stodolka and Sinha et al., Applicants respectfully submit that the claims, as presently amended, distinctly define the present invention from any of the art of record, taken alone or in combination. More specifically, the present claims define a method for cleaning rail tank cars consisting essentially of chlorine gas or sulfur dioxide gas wherein the input gas is dry and heated prior to being injected into the rail tank car in a discrete quantity. In addition, the method includes a cycle of injecting further discrete quantities of heated input gas into the rail tank car to form further input gas/chemical mixtures, removing the further input gas/chemical mixtures, and injecting the further input gas/chemical mixtures into the tank for neutralizing the chemical until the level of the chemical within the rail tank car reaches a

predetermined level. This combination of features is nowhere taught or disclosed by any of the cited prior art, taken alone or in combination.

More specifically, Brown and Bombard each disclose methods for the removal and recovery of hydrocarbons which are contained within an air/vapor mixture in bulk oil or gasoline storage tanks (Brown) and jet fuel tanks (Bombard). Neither Brown nor Bombard teach removal of a chemical from a rail tank car. In addition, as part of the removal and recovery process, Brown discloses using a caustic wash to remove small amounts of sulfur compounds that may be contained within the vapor mixture prior to the recovery of the hydrocarbons. However, both Brown and Bombard fail to teach or even disclose removing from a rail tank car chlorine gas or sulfur dioxide gas wherein the rail tank car consists essentially of either of these components. Independent claim 1 relates to using a tank of caustic material to remove sulfur dioxide gas or chlorine gas wherein the rail tank car consists essentially of the chlorine gas or sulfur dioxide gas. The other prior art, Stodolka and Sinha et al., fail to provide these missing elements.

Moreover, the prior art fails to teach injecting a quantity of dry and heated input gas to vaporize the sulfur dioxide gas or chlorine present in the system and to form input gas/chemical mixtures. Brown, in fact, teaches that the air/vapor mixture is dehumidified after removal from the tank, not prior to injecting any of the input gas into the tank. Bombard also teaches that the removal of the water from the air/vapor mixture occurs after removal of the air/vapor mixture from the tank, not prior to adding the air to the tank. Moreover, Sinha et al. actually teaches away from removing the water from the gas stream because "the presence of water vapor during the adsorption of the acid reacting materials

increases the efficiency permitting heavier loading of the impregnated activated carbon." (Col. 2, lines 20-23)

It is important in the present invention that the input gas be both dry and heated prior to entering the railcar and mixing with the chemical. First, the input gas should be dry because the presence of moisture in the input gas stream would react with the chlorine gas and sulfur dioxide gas, thereby forming acids, such as hydrochloric acid and sulfuric acid, that would damage the railcar, the valves and any pipes connected to the valves of the railcar. Moreover, heating the input gas increases the efficiency of the removal of the chlorine gas or sulfur dioxide gas from the railcar, and further increases the efficiency in the neutralization of the chlorine gas or sulfur dioxide gas in the tank of caustic material.

Both Brown and Bombard further teach that the gas is recycled in a closed loop air circulation path through the tank, as acknowledged by the Examiner. See Office Action dated May 27, 2004, p. 6, line1. Specifically, the Examiner stated:

> A blower in the path suctions air from the tank, and air is passed through a vapor recovery unit which has a cooling section and a reheated section. After the air is chilled in the cooling sections, it is passed through the reheated section and redirected back through the fuel tank to evaporate residual fuel in the tank, the evaporating being enhanced by the heat content of the reheated air (see [Bombard] col. 2, lines 4-20).

Id., p. 6, lines 1-6.

However, the method described in the present invention is not a closed loop system, as taught in the prior art. Discrete quantities of fresh heated input gas are injected into the rail tank car to form input gas/chemical mixtures, the input gas/chemical mixtures are removed from the rail tank car and injected into the neutralizing tank, whereby the chemical is neutralized, and the input gas is released. The input gas is not recycled back to

the rail tank car, as described in the prior art. This ensures that only fresh input gas is utilized to remove the chemical from the rail tank car, thereby maintaining high efficiency in the removal of the chemical from the rail tank car.

In addition, the cited prior art appears to teach methods whereby the air or gas streams are continuously flushed through the tanks and the air or gas mixtures are continuously removed, rather than in discrete quantities. Specifically, Brown teaches that the blower removes approximately 1000 to about 5000 cubic feet per minute in an apparently continuous flushing process. In addition, Bombard teaches a continuous removal of the jet fuel from the tank. Stodolka specifically discloses a "gas sweep" to facilitate vapor carry-over. Specifically, Stodolka describes the "gas sweep" as being a "continuous stream" of gas supplied to the vessel. (*See* col. 3, lines 39-40). It appears that Sinha et al. also teaches a method whereby a continuous stream of polluted gases is passed through the bed of activated carbon impregnated with the caustic material. None of the cited prior art teach or even disclose a method whereby discrete quantities of input gas are repeatedly injected into a railcar for cleaning the railcar.

The present invention, however, defines a method whereby discrete quantities of dry and heated input gas are injected into the railcar, allowed to mix with the chemical contained therein, removed from the railcar and injected into the tank of caustic material to neutralize the chemical. Further quantities of dry and heated input gas are injected into the railcar to form further input gas/chemical mixtures, removed from the railcar, and injected into the tank of caustic material to neutralize the chemical. By using discrete amounts of dry and heated input gas, the amount of input gas utilized in the cleaning method can be precisely controlled. Moreover, the efficiency of the removal of the chemical can be

increased because the input gas can vaporize the chemical and mix with the chemical prior to removal of the input gas/chemical mixture from the railcar. Moreover, because the input gas has time to mix with the chemical within the railcar, the concentration of the chemical within the railcar can be precisely monitored such that the railcar can be removed from the cleaning process at the moment that the amount of chemical within the railcar has reached the predetermined level.

For the foregoing reasons, it appears that the cited prior art does not teach or even disclose each of the critical features or limitations of independent claim 1. In addition, even if the disparate references disclose the critical features of Applicants' invention, it appears that the Examiner has merely located four isolated disclosures that allegedly illustrate the elements of the claims invention using the blueprint supplied by the Applicants. It is well-established that it is insufficient to select from the art the separate components of the Applicants' combination using the blueprint supplied by the Applicants. *Rosemount, Inc. v. Beckman Instruments, Inc.*, 727 F.2d 1540, 1546, 221 U.S.P.Q. 1, 7 (Fed. Cir. 1984). Moreover, it appears that the Examiner has used "hindsight reconstruction" to pick and choose between the isolated disclosures in the art to deprecate the claimed invention. Of course, it is also well-established that "hindsight reconstruction" of an invention is impermissible. *See In re Fine*, 837 F.2d 1071, 1075 (Fed. Cir. 1988).

Moreover, Applicants respectfully submit that even if the references disclosed the claimed features positively recited in the claims, the references have failed to provide the requisite incentive to make the combination. In considering obviousness, the critical inquiry is whether something in the art as a whole suggests the desirability, and thus the obviousness, of making the combination. *See In re Newell*, 891 F.2d 899, 901,02, 13

U.S.P.Q.2d 1248, 1250 (Fed. Cir. 1989). More specifically, a teaching, suggestion, or incentive must exist to make the combination made by the Applicants. *Interconnect Planning Corp. v. Feil,* 774 F.2d 1132, 1143, 227 U.S.P.Q. 543, 551 (Fed. Cir. 1988). However, neither Brown, Bombard, Stodolka nor Sinha et al. suggest the desirability of making any combination that could yield Applicants' invention.

With the analysis of the deficiencies of Brown, Bombard, Stodolka, and Sinha et al., as enumerated above, no reason or suggestion in the evidence of record exists why one of ordinary skill in the art would have been led to produce the claimed invention. Therefore, *prima facie* obviousness has not been established by the Examiner as required under 35 U.S.C. §103(a).

Since the Examiner has failed to establish a *prima facie* case of obviousness in combining Brown with Bombard, Stodolka and Sinha et al., the rejection of the claims under 35 U.S.C. §103(a) is improper and should be withdrawn. Applicants respectfully request the Examiner to indicate the claims as allowable over the references of record.

Claims 2-5, 7-21 and 24 depend from claim 1. These claims are further believed allowable over the references of record for the same reasons as set forth above with respect to their parent claims since each sets forth additional steps of Applicants' novel method.

CONCLUSION

In view of the foregoing remarks and amendments, Applicants respectfully submit that all of the claims in the application are in allowable form and that the application is now in condition for allowance. Applicants further respectfully submit that neither further search nor consideration would be necessitated by entry of this amendment. Therefore, entry is proper and should be effected.

If, however, any outstanding issues remain, Applicants urge the Examiner to telephone the Applicants' attorney so that the same may be resolved and the application expedited to issue. Applicants respectfully request the Examiner to indicate all claims as allowable and to pass the application to issue.

Respectfully submitted,

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